

67,200-262  
Serial Number 09/588,788

### REMARKS

Favorable reconsideration of this application in light of the above amendments and the following remarks is respectfully requested.

Claims 1-2, 4-8 and 16 are pending in this application. Claim 3 is canceled herein. Claim 16 is added herein. No claims have been allowed.

#### *Specification*

The Examiner has apparently implicitly objected to applicant's title of the invention as not adequately descriptive of applicant's invention.

In response, applicant has amended applicant's title of the invention in a fashion as suggested by the Examiner, to provide a title which is more descriptive of applicant's invention.

In light of the foregoing response, applicant respectfully requests that the Examiner's apparent implicit objection to applicant's title of the invention be withdrawn.

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*Claim Rejections - 35 U.S.C. § 102*

The Examiner has rejected claims 1-8 under 35 U.S.C. § 102(b) as being anticipated by Esper et al. (U.S. Patent No. 4,613,843; hereinafter "Esper").

In response, applicant respectfully disagrees with the Examiner's reading of Esper insofar as the Examiner asserts within the sentence bridging pages 2-3 of the office action made FINAL that Esper discloses a planar spiral conductor layer (derived from Esper's top coil 91 and bottom coil 92) which forms a planar spiral inductor, wherein the planar spiral conductor layer is formed with a continuous variation of a series of linewidths of a successive series of spirals within the planar spiral conductor layer (in accord with applicant's invention as disclosed and claimed within amended claim 1).

Rather, in a first instance, applicant understands that if Esper's top coil 91 and bottom coil 92 are considered in an aggregate to form a spiral conductor layer which forms a spiral inductor as suggested by the Examiner, the spiral inductor as suggested by the Examiner is not a planar spiral inductor in accord with applicant's invention as disclosed and claimed within amended claim 1, since Esper's top coil 91 and Esper's bottom coil 92 in an aggregate do not form a planar spiral conductor layer but rather a three dimensional bi-spiraled conductor layer.

In addition, in a second instance, applicant notes that Esper at col. 4, lines 15-16 clearly discloses a single specific linewidth (i.e., 4 microns) apparently for spirals within both Esper's top coil 91 and Esper's bottom coil 92. If Esper intended different linewidths for spirals

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within Esper's top coil 91 and Esper's bottom coil 92, Esper clearly would have provided a minimum of two specific linewidths, rather than a single specific linewidth, for spirals within Esper's top coil 91 and Esper's bottom coil 92.

Thus, since each and every limitation within applicant's invention as disclosed and claimed within amended claim 1 is not disclosed within Esper, particularly with respect to a planar spiral conductor layer being formed with a continuous variations of a series of linewidths of a series of successive spirals thereof to form a planar spiral inductor, applicant asserts that amended claim 1 may not properly be rejected under 35 U.S.C. § 102(b) as being anticipated by Esper.

Since all remaining claims within the foregoing rejection are dependent upon amended claim 1 and carry all of the limitations of amended claim 1, applicant additionally asserts that those remaining claims may also not properly be rejected under 35 U.S.C. § 102(b) as being anticipated by Esper.

As a related item, and as an adjunct with respect to claim 6, applicant notes that Esper's bottom coil 92 (Fig. 6) forms both an outermost spiral and an innermost spiral within Esper's spiral inductor. Thus, even if spirals within Esper's top coil 91 and Esper's bottom coil 92 were of different linewidth (which as noted above is unsupported within Esper), claim 6 is not anticipated by Esper since there exists no progression of linewidth of the series of spirals within Esper's inductor structure as is required within applicant's claim 6..

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In light of the foregoing responses, applicant respectfully requests that the Examiner's rejections of claims 1-8 under 35 U.S.C. § 102(b) be withdrawn.

*Response to Arguments*

In accord with applicant's response to the rejection of claims 1-8 under 35 U.S.C. § 102(b) as above, and while applicant acknowledges that Esper's top coil 91 and Esper's bottom coil 92 are electrically connected to provide in an aggregate an inductor, for reasons as discussed above Esper's top coil 91 and Esper's bottom coil 92 when so connected do not provide a planar spiral conductor layer in accord with applicant's invention as disclosed and claimed within amended claim 1. In addition, Esper apparently explicitly discloses only a single linewidth for a series of spirals in both Esper's top coil 91 and Esper's bottom coil 92, although if Esper intended different linewidths for Esper's top coil 91 and Esper's bottom coil 92 Esper could easily have specified the same. For these reasons, applicant continues to assert that applicant's claims 1-8 may not properly be rejected under 35 U.S.C. § 102(b) as being anticipated by Esper.

*Other Considerations*

Applicant has canceled claim 3 and added new claim 16 which provides that: (1) applicant's planar spiral conductor layer is a single spiral planar spiral conductor layer; and (2) applicant's continuous variation is a progressively increasing or decreasing continuous variation. Support for newly added claim 16 is found within applicant's specification within the paragraphs which bridge pages 9-11.

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No fee is due as a result of this amendment and response.

### SUMMARY

Applicant's invention as disclosed and claimed within amended claim 1 is directed towards a method for fabricating an inductor structure comprising a planar spiral conductor layer, wherein a successive series of spirals within the planar spiral conductor layer is formed with a continuous variation in at least one of: (1) a series of linewidths of the successive series of spirals; and (2) a series of spacings separating the successive series of spirals. Absent from the prior art of record employed in rejecting applicant's claims to applicant's invention is a disclosure or each and every limitation within applicant's invention as disclosed and claimed within amended claim 1.

### CONCLUSION

On the basis of the above amendments and remarks, reconsideration of this application, and its early allowance, are respectfully requested.

Any inquiries relating to this or earlier communications pertaining to this application may be directed to the undersigned attorney at 248-540-4040.

Respectfully submitted,

Randy W. Tung (Reg. No. 31,311)

838 West Long Lake Road - Suite 120  
Bloomfield Hills, MI 48302  
248-540-4040 (voice)  
248-540-4035 (facsimile)

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**APPENDIX I**  
**PORTION OF THE SPECIFICATION**  
**(MARKED-UP WITH CURRENT REVISIONS)**

**Title of the Invention**

**A Method of Fabricating a Planar Spiral Inductor Structure Having an Enhanced Q Value**

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**APPENDIX II**  
**COMPLETE COPY OF THE CLAIMS**  
**(MARKED-UP WITH CURRENT REVISIONS)**

1. (amended) A method for fabricating an inductor structure comprising:
  - providing a substrate;
  - forming over the substrate a planar spiral conductor layer to form a planar spiral inductor, wherein a successive series of spirals within the planar spiral conductor layer is formed with a continuous variation in at least one of:
    - a series of linewidths of the successive series of spirals; and
    - a series of spacings separating the successive series of spirals.
2. The method of claim 1 wherein by employing within the successive series of spirals within the planar spiral conductor layer the variation in at least one of the series of linewidths of the successive series of spirals and the series of spacings separating the successive series of spirals, the planar spiral inductor is fabricated with an enhanced Q value.
3. (canceled)
4. The method of claim 1 wherein the successive series of spirals is formed in a shape selected from the group consisting of a triangle, a square, a rectangle, a higher order polygon, a uniform ellipse, a non-uniform ellipse and a circle.

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5. The method of claim 1 wherein the planar spiral conductor layer is formed of a conductor material selected from the group consisting of non-magnetic metal, non-magnetic metal alloy, magnetic metal, magnetic metal alloy, doped polysilicon and polycide conductor materials, and laminates thereof.
6. The method of claim 1 wherein the variation in the series of linewidths of the successive series of spirals is an increasing progression of linewidth from a first spiral which defines the center of the planar spiral inductor having a comparatively narrow linewidth to a final spiral which defines the perimeter of the planar spiral inductor having a comparatively wide linewidth.
7. The method of claim 6 wherein the comparatively narrow linewidth is from about 7 to about 10 microns and the comparatively wide line width is from about 17 to about 21 microns.
8. The method of claim 1 wherein the successive series of spirals comprises from about 1 to about 8 spirals.
9. - 15. (canceled)
16. (newly added) The method of claim 1 wherein:  
the planar spiral conductor layer is a single spiral planar spiral conductor layer; and  
the continuous variation is a progressively increasing or decreasing continuous variation.